



# CEO briefing

A document of the UNEP FI Climate Change Working Group

## Emissions Trading

### Climate Change Working Group Statement

**E**missions trading is an economically efficient, market-based instrument that encourages the transition to a more sustainable economy. We see domestic and regional trading as a positive first step. International trading schemes, such as the Kyoto Protocol flexible mechanisms and the European trading regime, offer the opportunity to capitalise on widely varying emission abatement costs.

The flexible mechanisms are an effective way to reduce emissions at a lower cost, recognising that their efficiency depends largely on their design. The financial sector will play an important role in the operation of this international market and from the perspective of the financial services sector, we recommend thorough consideration of the following issues when implementing the emissions trading market.

**Scope and size** The successful development of an emissions trading market depends on the liquidity of the market. An international emissions trading regime requires not only a broad range of sectors but also sufficient volume to ensure an adequate diversity of contracts.

**Market access** Traders and financial intermediaries increase market liquidity and reduce volatility and are therefore a necessary component in an emissions trading scheme.

**Market compatibility** Transferability of certificates across regional and national markets, and between flexible mechanisms for example, is an important condition for market liquidity and cost efficient emissions reduction.

**Emission reduction targets** Within such an international trading scheme, absolute emission reduction targets, as called for by the Kyoto Protocol, are an important prerequisite for credible, efficient and effective emissions trading.

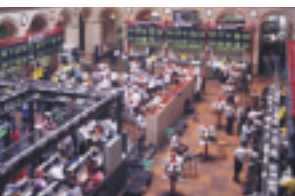
#### Purpose

In the first of a series of business-relevant opinion papers by the UNEP FI Climate Change Working Group, we explore the issue of emissions trading from a financial sector perspective. The first CEO Briefing on climate change and the financial services industry offered strong support for market-based solutions to climate change including emissions trading. This paper follows up on some of the key recommendations – outlining the current political developments, explaining the manner in which companies are affected, discussing the risks and opportunities emissions trading presents, and delving into the role of financial services providers in diminishing the respective risks and creating new opportunities.

# 1. Emissions Trading – Political and market framework

## Emissions Trading under the UNFCCC and Kyoto Protocol

The United Nations Framework Convention on Climate Change (UNFCCC) is one of the most universally supported international environmental agreements to date. Entering into force in March 1994, the convention has been joined by 188 states and the European Community (EC) thus far. Since 1995, the Parties to the Convention have met annually at the Conference of the Parties, known as the COP, to monitor progress and discuss issues related to the implementation of the Convention.



“Climate change risks are an important challenge for the international financial markets – Emissions Trading is an efficient way to manage these risks.”

**Otto Steinmetz**  
Chief Risk Officer  
Dresdner Bank

During COP 3 in 1997, a substantial extension to the Convention was adopted in Kyoto, Japan – the Kyoto Protocol – outlining legally binding greenhouse gas (GHG) reduction commitments. The agreement commits developed countries to reduce their GHG emissions by an average of 5% below 1990 levels by the years 2008 to 2012. The Kyoto Protocol will enter into force ninety days after a minimum of 55 parties (accounting for at least 55% of the total carbon dioxide (CO<sub>2</sub>) emissions for 1990) deposit their instruments of ratification, acceptance, approval or accession.

The protocol is breaking new ground with the incorporation of three innovative market mechanisms – International Emissions Trading (IET), Joint Implementation (JI) and the Clean Development Mechanism (CDM). The three mechanisms are designed to improve the cost-effectiveness of climate change mitigation by enabling parties to cut emissions more cheaply abroad than at home. This is important given that the net effect of mitigation on the atmosphere is the same regardless of where on the planet the action is taken.

As of November 2003, 119 parties had joined the Kyoto Protocol. Russia’s outstanding but anticipated ratification would lift the total percentage of CO<sub>2</sub> emissions over the 55% threshold, bringing the protocol into force.

In preparation for the trading scheme under the Kyoto Protocol, a number of emissions trading initiatives have already emerged, some on a global and others on a regional scale:

- The Chicago Climate Exchange (CCX), a voluntary CO<sub>2</sub> trading market in the US, started trading in December 2003.
- In July 2003, the European Community (EC) adopted a Directive on establishing a scheme for mandatory GHG emissions allowance trading within the Community from 2005.
- A pilot scheme, the Prototype Carbon Fund (PCF), was initiated in 2001 by the World Bank with the aim of achieving emission reductions within the framework of JI and the CDM. Two new funds, the BioCarbon Fund (BCF) and the Community Development Carbon Fund (CDCF) are also being launched in 2003.

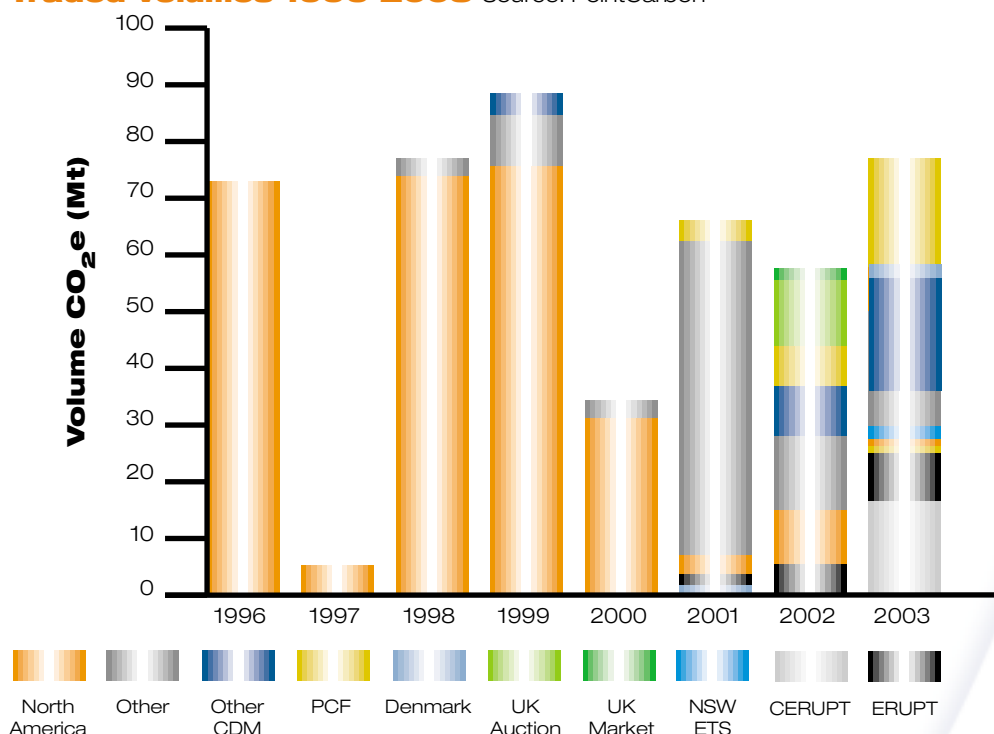
Under International Emissions Trading, industrial countries can trade part of their emissions budget, known as Assigned Amount Units (AAUs), which will be allocated to the Kyoto Protocol signatory states. A party with high marginal costs of reduction can acquire emission reductions from another party with lower costs of reduction. This helps both the buyer and the seller reduce their emissions at minimal cost. Legislators implement emission reductions by decreasing the number of certificates available in the market. This provides incentives for companies to invest in emission abatement technologies. In principle, this trading regime applies to nation states, although the participation of companies is not entirely excluded.

Joint Implementation and the Clean Development Mechanism are project-based mechanisms, as emission certificates are generated via concrete emission reduction projects. Under JI, an industrialised country invests in emission reduction projects in another industrialised or transformation country and receives credits for achieved emission reductions - the Emission Reduction Units (ERUs). Under the CDM, an industrialised country invests in projects in a developing country and obtains credits for achieved emission reductions called Certified Emission Reduction Units (CERs). ERUs and CERs can be used as equivalents to AAUs towards compliance with the reduction target of the Kyoto Protocol. **Useful link: <http://unfccc.int>**

- The Netherlands initiated two national tender programmes in 2001 to purchase CO<sub>2</sub> certificates from JI and CDM projects (ERUPT/CERUPT).
- Since 2001, Denmark and the UK have both initiated domestic trading schemes.
- A domestic emissions trading scheme for sulphur dioxide, the 'Acid Rain Program', was established in 1990 in the US.
- New national tender programmes to purchase CO<sub>2</sub> are being launched, or being considered by other governments in Europe (e.g. Austria, Denmark, Finland, Sweden etc.).
- Canada and Japan are considering putting in place domestic emissions trading schemes.
- From 2008, international emissions trading should be possible under the Kyoto Protocol.

Against this background, the international market for GHG emission certificates is still highly fragmented, but will become more homogenous when the Kyoto Protocol enters into force. Of all the current initiatives, the EC's proposed scheme, due to start in 2005, is the most ambitious and will create the world's largest CO<sub>2</sub> market.

**Traded Volumes 1996-2003** Source: PointCarbon



### Emissions Trading in the European Community

Commencing 1 January 2005, large energy-using sites in selected industries in the EC and their accession countries will have to limit their emissions of GHGs (most notably CO<sub>2</sub>) to allocated levels. The first commitment period will be between 2005 and 2007 and the second period will run from 2008 to 2012. Emissions trading will create an economically efficient and ecologically effective way of fulfilling the EC countries' reduction targets established by the Kyoto Protocol. The principles underlying the EC emissions trading system are simple:

- Companies within targeted sectors will be allocated permits and at the end of each year must hold sufficient allowances – the so called EU allowances (EUAs) – to cover their permits.
- Companies reducing emissions in affected plants to below the annually allocated emissions budget can sell their excess EUAs to companies requiring additional certificates.
- Companies emitting GHGs without permission are subject to sanctions. During the first commitment period, the EU member states will apply an excess emissions penalty of €40 for each tonne of CO<sub>2</sub> emitted by that installation for which the operator has not surrendered allowances. From 2008 onwards, the penalty will be €100 per tonne. Payment of the excess emissions penalty will not however, release the operator from the obligation to surrender those allowances representing excess emissions in relation to the following calendar year.

According to the European Commission, some 1,200 million tonnes of CO<sub>2</sub> will be included in the system throughout Europe, corresponding to approximately 46% of the Community's 2010 CO<sub>2</sub> emissions.

### Who is affected and what are the risks?

Those sectors and installations affected by the Directive are highlighted in the table below. Some 12,000 European installations will have clearly defined limits for their CO<sub>2</sub> emissions.

#### Sectors covered by the scheme

Energy sector	Metals sector	Minerals sector	Others
<ul style="list-style-type: none"> <li>■ combustion* excluding waste combustion</li> </ul>	<ul style="list-style-type: none"> <li>■ ores</li> </ul>	<ul style="list-style-type: none"> <li>■ cement (over 500t per day)</li> </ul>	<ul style="list-style-type: none"> <li>■ pulp</li> </ul>
<ul style="list-style-type: none"> <li>■ mineral oil refineries</li> </ul>	<ul style="list-style-type: none"> <li>■ pig iron and steel (over 2.5t per hour)</li> </ul>	<ul style="list-style-type: none"> <li>■ lime (over 50t per day)</li> </ul>	<ul style="list-style-type: none"> <li>■ paper (over 20t per day)</li> </ul>
<ul style="list-style-type: none"> <li>■ coke ovens</li> </ul>		<ul style="list-style-type: none"> <li>■ glass (over 20t per day)</li> </ul>	
<p>* (over 20MW thermal, aggregated for all on-site activities)</p>		<ul style="list-style-type: none"> <li>■ ceramics (over 75t per day)</li> </ul>	

As early as March 2004, the member states' governments must present national allocation plans which will determine the participating companies' initial emission budgets.

#### Carbon risk management for companies

Against this background, all companies participating in the scheme should realise that CO<sub>2</sub> risk management will emerge as an important factor in their decision-making. The most important risk categories for individual companies resulting from emission reduction targets are:

- cash flow risks, such as increased expenditure on measures aimed at reducing CO<sub>2</sub> or the purchase of emission allowances;
- market perception risks which may influence market capitalisation; and
- capital cost risks, such as more stringent credit conditions as a result of altered credit risk ratings. The drawing up of emission inventories and measures taken to increase energy efficiency will, in future, play important roles in the financial rating process.

To understand their potential carbon risks, companies should have in place a robust and accurate GHG inventory which details past, current, and projected future emissions. They should understand the marginal abatement cost options available from different GHG mitigation strategies and they should understand the tools that are available to achieve compliance within different GHG regulatory regimes.

Financial services providers can assist companies in managing these effects, and in particular, reducing the transaction costs of trading by offering new products and services.

## 2. Risk management tools from the banking perspective

Offering new products and services to reduce the risk of emissions trading for corporate customers is a new business challenge for banks. Furthermore, banks usually hold stakes in the companies affected by trading. Consequently, the risks and opportunities for those companies are also risks and opportunities for the banks. The complexity of emissions trading requires a wide range of products and services that effectively hedge against risks emerging from the Kyoto Protocol and the European trading scheme.

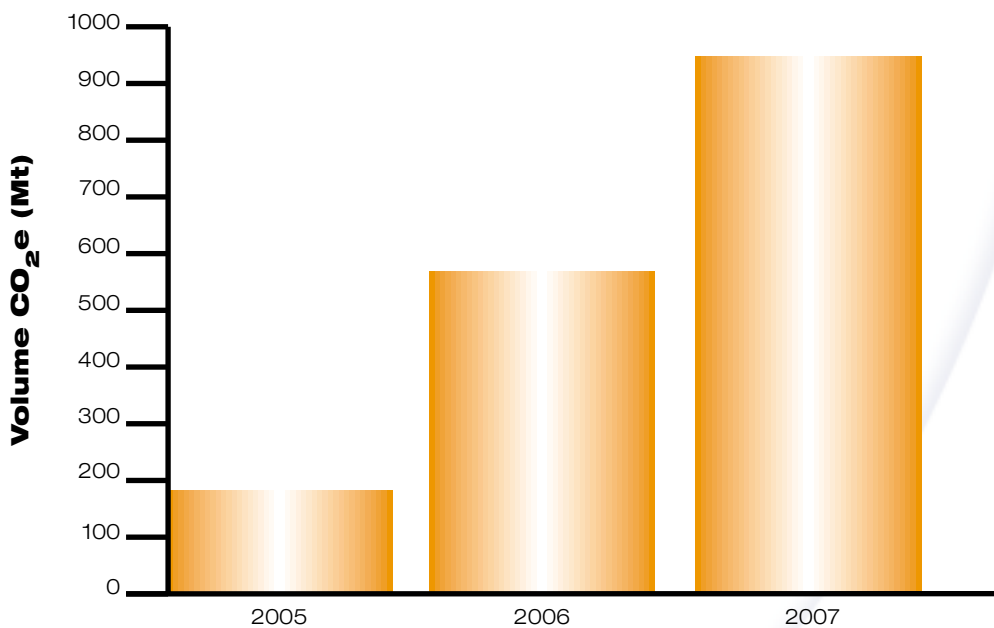
Most importantly, various types of derivatives can be used, such as:

- forwards: the purchase of emission allowances to be supplied in the future at a fixed price – currently the most common type of market-traded allowance;
- options: a guarantee of the right to purchase or sell allowances at a fixed price within a defined period of time; and
- swaps: the exchange of payment obligations so that different allowance currencies can be exchanged.

The market for EUAs, traded on a forward basis, has already started to emerge in 2003. Current market estimates indicate a steep rise in traded EUA volumes in future years.

### The EU Allowances Market - Estimations concerning volume

Source: PointCarbon



Besides derivatives trading, banks can offer the service of EUA portfolio management while taking over the responsibility of their clients' EUA accounts. The most striking advantage of such a service is that it is not necessary to set up internal expertise in the affected companies, thus resulting in lower transaction costs.

Emissions trading also offers potential business in the field of project finance – providing project developers with the chance to generate additional income sources by investing in energy-efficient technology. This applies to JI and CDM projects, where the inclusion of emission credits in the analysis of a project's credit quality could become imperative. In principle, the securitisation of these cash flows could either help to reduce the financing needs of a project developer or reduce the re-financing costs by embedding them into interest rate derivatives. Accordingly, emission certificates could help plant developers with new financing mechanisms, thereby leading to more sophisticated structures as the market expands. However, the practical experiences have shown that there are still many political and technical obstacles to overcome.



# 3. Risk management tools from the insurance perspective

The response of the insurance and reinsurance industries to the challenge of providing their clients with solutions to enable compliance with emissions trading requirements has been gathering pace over the last few years. A number of the solutions provided are adaptations of classic risk transfer solutions whilst others break new ground, in some cases blending insurance and financial products.



“The financial sector has a key role to play in delivering market solutions to climate change.”

## 2002 Study

UNEP FI Climate Change Working Group

### Directors and Officers

Directors & Officers (D&O) insurance products offer cover to senior executives for their professional liability as company leaders. As soon as there is a legal obligation to reduce GHG emissions, new liabilities are likely to be faced by companies and their top executives. Whilst fines or penalties resulting from a breach of law would not be covered under a D&O policy, inappropriate or inadequate management of climate risks, resulting in a failure to protect a company's interests, could potentially lead to proceedings being taken against senior decision-makers. A possible cause for action could arise if shareholder value was perceived as being damaged due to such a failure of management.

### Professional Indemnity

As part of the process of creating emission certificates, a pivotal contribution will be made by those who verify that certificates meet the required standards. Those conducting validation, verification and certification work, such as auditing organisations, will carry additional responsibilities. These roles will require professional indemnity policies to cover the new areas of practice.

### Project Finance

The focus of many emission reduction activities will most likely be project-based. Therefore, project finance, whether offered by the banking, insurance or reinsurance industries, offers new opportunities when applied to projects aimed at reducing emissions (and clean energy in general). By reducing the risks associated with emission reduction schemes through such tools as carbon delivery guarantees, contingent guarantees and traditional insurance products (e.g. fire, engineering and construction coverage for the projects themselves), a number of benefits should logically follow, including increased project investment ratings, reduced financing costs and improved return on equity.

### Delivery Guarantee

Delivery guarantees are products offered by the insurance industry where the re/insurer acts as guarantor and financial compensation is paid if a product is not delivered according to agreed terms and conditions. This system can be used as a facilitator leading up to, and in the early years of, an emissions trading scheme. It is likely that instead of a monetary amount, the re/insurer of a project failing to deliver CERs would pay compensation in the form of CERs.

An example of this could be as follows: to ensure future compliance with its emissions ceiling, a buyer has the option to buy CERs in advance directly from a seller. After locating a seller, the buyer agrees to purchase a specified number of CERs. In the early stages of any new market system, there is a higher degree of uncertainty, especially if the 'production time' (order to delivery) is extended over several years. It is therefore likely that, due to a potential risk of non-delivery, the seller is required to reserve a larger quantity of CERs for the buyer than the buyer requires. This gives the buyer a buffer to increase the probability that the quantity of CERs it requires will indeed be delivered.

Alternatively, the re/insurer with contacts to CER sellers agrees to purchase a large quantity of credits from various sellers. Having done this, the re/insurer would then guarantee delivery to various buyers. This reduces the risk of failure of delivery and removes the need for the buyer to locate suitable sellers. Through this process, both buyer and seller benefit as the risk associated with the transaction is reduced and the important element of confidence is added to the system. In addition to delivery guarantees, the risk of non-delivery can also be covered by other risk management tools such as extension of trade and investment insurance.

Furthermore, it is likely that additional risk transfer and finance solutions will be required in the future. For example, the area of business interruption has not yet been widely discussed. A seller of CERs may wish to protect itself from a financial loss following its inability to deliver the CERs because of an unforeseen event such as a fire. Equally, the buyer of CERs may require a contingency business interruption cover to protect itself should it suffer a financial loss due to the supplier being unable to provide the CERs. Although the concept remains the same as conventional business interruption insurance, the best approach to this product, in relation to the requirements of emissions trading, needs to be discussed within the industry and its clients.

## 4. Beyond compliance – GHG neutral products and services

The emergence of carbon markets is leading to new opportunities for financial institutions beyond that of emissions trading. Looking at current trends, there is evidence that consumer choice is being affected by companies' attitudes towards the issue of climate change. Offering GHG neutral products and services is a way to capitalise on these trends.

One way to offer GHG neutral products is for a company, community or individual to offset emissions in order to help achieve an overall GHG neutral situation. For example, goods, raw materials and services could be delivered to a company 'carbon neutral'. A similar approach can be taken with the provision of services. For example, a growing number of conferences and other events are being promoted as GHG neutral. On a private individual level, consumers may be offered the choice of buying their day to day goods in a verified 'carbon neutral' format, thus offering new product opportunities for producers.

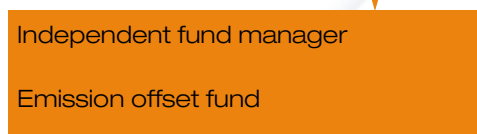
So what is the basic idea of GHG neutral products and services? Prior to delivery, a supplier would offset the GHGs attributable to its products through the payment of a fee or contribution. The financial institution, acting as an independent asset manager, would take these contributions and use its experience in risk management and project finance to invest in GHG-offsetting and mitigation projects. Examples of projects could include those focusing on renewable energy or energy efficiency. The products would then be delivered to consumers and other businesses as 'off the shelf' GHG neutral products. This would also assist downstream businesses by reducing or eliminating the amount of active offsetting they would need to conduct themselves. There is evidence of the willingness of consumers to pay an additional fee for products which are GHG neutral.

### How to offer GHG neutral products

#### Consumer choice



#### Additional contribution



1. The study Climate Change and the Financial Services Industry was commissioned by the United Nations Environment Programme Finance Initiative (UNEP FI) in 2002. The CEO Briefing is a summary of the complete study.

## UNEP FI

The United Nations Environment Programme Finance Initiative (UNEP FI) is a unique global partnership between UNEP, financial institutions, insurance and re-insurance companies and fund managers. Based in Geneva, Switzerland, UNEP FI has over 260 member institutions worldwide.

UNEP is headquartered in Nairobi, Kenya. UNEP has eight divisions through which it carries out its activities, including the Division of Technology Industry and Economics (DTIE) based in Paris, France. The Economics and Trade Branch (ETB), based in Geneva, Switzerland, is a branch of DTIE. The Finance Initiative is a unit of the ETB.

<http://unepfi.net/cc>

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